Chico

Golden
Empire
Amateur
Radio
Society, Inc.

“Dedicated to Public Service”

THE RADIATOR

SPECIAL SERVICE CLUB

W6RHC
IRLP #8170

www.gearsw6rhc.org

P.O.Box 202 Chico, CA 95927

February 2024 Newsletter	GEARS Founded August 13, 1939

Seems that we are having a mild winter this year, which makes it much easier to do outdoor actives. It's a great time to maintain your antennas, masts and towers. GARS held their winter field day last weekend. Also there was the Clipperton Island DX expedition, several GEARS members were able to complete a QSO with them.

As we head toward spring there will be more fun stuff. On March 16th there will be the Loomis Hamfest, the details are included in this newsletter.

Also in this newsletter I’ve included a little information about the history of the GEARS repeater in Forrest Ranch. We are also working to find another frequency pair for the GEARS West repeater due to the QRM issues. We’ll let you know when any changes are made.

Thanks to your dues and donations, GEARS was able to make a donation to the Library to show our appreciation for allowing us to use the meeting room.

VEC FCC License Exam on Feb 4th. For information or registration call Tom Rider, W6JS 530-514-9211

Our monthly breakfast will continue to meet on the second Saturday each month, 9am at Farmer’s Skillet on Cohasset in Chico.

At the February GEARS meeting on the 19th Michael Favor N6FAV will be discussing logging software. Monday evening at the Chico public library. Doors open at 6pm, meeting at 7.

If you can’t make it to our meeting, join us on the Tuesday night net, 7:30 PM 146.850 MHz - PL 110.9

I hope to see you at our events, otherwise I’ll see you on the radio.

Jim Matthews K6EST

February 2024 Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 7:30pm Simplex Net	2	3
4 8pm OARS Net 2pm VEC Testing	5 7pm GARS Net 7pm GEARS Board Meeting 8pm ARES Net	6 7pm PARS Net 7:30pm GEARS Net	7	8 7:30pm Simplex Net	9 7pm OARS meeting 7pm GARS meeting	10 9am Chico Breakfast
11 8pm OARS Net	12 7pm GARS Net 8pm ARES Net	13 7pm PARS Net 7:30pm GEARS Net	14	15 7:30pm Simplex Net	16	17
18 8pm OARS Net	19 6pm GEARS Meeting 7pm GARS Net 8pm ARES Net	20 7pm PARS Net 7:30pm GEARS Net	21	22 7:30 Simplex Net	23	24 9am OARS Breakfast
25	26 7pm GARS Net 8pm ARES Net	27 7pm PARS Net 7:30pm GEARS Net	28	29 7:30 Simplex Net		

VEC Testing, FCC License Exam available by appointment. For information or registration call Tom Rider, W6JS 530-514-9211
Chico Breakfast 2nd Saturday 9am Farmers Skillet Cohasset Rd, Chico
GEARS Board Meeting 1st Monday 7pm by Google video meetups.
PARS Meeting 2nd Thursday 6:30pm, doors open 6pm Old Magalia Community Resource Center
OARS Meeting Second Friday of the month, St. Pauls Episcopal Church Hall, Oroville.
GARS Meeting Second Friday of the month, Lutheran Church Hall, Artois.
GEARS Meeting, Doors open 6pm, meeting 7pm at Chico Public Library, 1108 Sherman Ave, Chico
OARS Breakfast 4th Saturday of the month, at Cornucopia of Oroville.

NETS:
OARS Club Net Sunday 8pm 146.655 Mhz - PL 136.5
GARS Club Net Monday,7:00 pm 147.105 MHz + PL 110.09, secondary: 146.850 MHz-PL 110.9
Yuba Sutter Club Net Monday 7pm 146.085 MHz + PL 127.3
GEARS Club Net Tuesdays 7:30 PM 146.850 MHz - PL 110.9
PARS Club Net Tuesday 7pm 145.290 - PL 110.9
Simplex Net Thursday 7:30 p.m. 146.52 no tone
Yuba Sutter ARES Net Thursdays 7pm 146.085 MHz + PL 127.3
Sacramento Valley Traffic Net Nightly 9:00 PM 146.850 MHz - PL 110.9

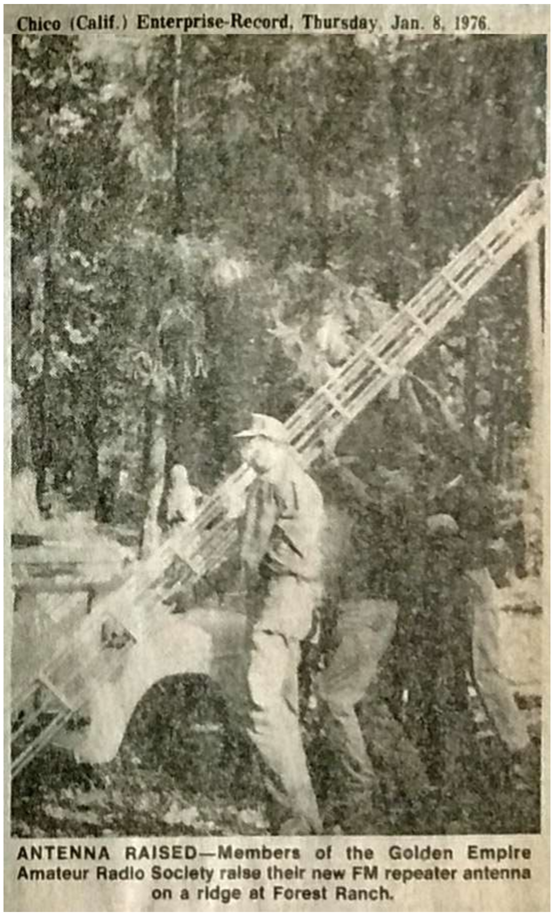
The GEARS East Repeater

The GEARS East Repeater in Forrest Ranch was established in 1975. An antenna tower was erected in January of 1976. Unfortunately this tower collapsed during a heavy storm in September 2012 which required it’s removal. The current antenna is mounted high up on a pine tree.

The location was given to the club informally in 1978 by Roy Rolls and Dorothy Rolls. This arrangement was formalized in May of 1992 by a permanent easement.

The repeater has PG&E power with battery and solar backup power. Your dues and donations to GEARS help keep it operational.

GEARS East Repeater taken January 2023



Chico (Calif.) Enterprise-Record, Thursday, Jan. 8, 1976.

ANTENNA RAISED—Members of the Golden Empire Amateur Radio Society raise their new FM repeater antenna on a ridge at Forest Ranch.

Chico Enterprise Record January 8, 1976

GEARS weekly Tuesdays night net uses the GEARS East Repeater. 7:30 PM 146.850 MHz - PL 110.9

What is Amateur Radio Direction Finding?

By Elizabeth Klinc, KE8FMJ

Also known as fox hunting or radiosport, amateur radio direction finding (ARDF)is a sport that combines the use of ham radio gear, a topographic map, a magnetic compass, and orienteering skills. It is a timed race in which individual competitors or teams navigate through all kinds of terrain while searching for radio transmitters.

Direction finding originated in northern and eastern Europe in the late 1950s. Amateur radio was widely promoted in certain European schools as a modern technical and science activity. Most medium size and larger cities contained one or more amateur radio clubs where the members would gather and learn about the technology and operate the radio equipment. Direction finding and amateur radio were also promoted as important civil defense activities during the Cold War. Most people living in Europe at the time did not have personal automobiles, so most direction-finding activity took place on foot in parks, nature areas, or school campuses.

The transmitter used in direction finding is called a beacon. The beacon emits a weak radio signal. The tracker is a directional antenna and receiver used to find the beacon's location.

The tracker looks like a television antenna with a little box called a sniffer. The sniffer lets you hear the beacon's signal and determine the direction of the beacon from your current location. You can follow the tracker to the beacon or you can triangulate the signal. To triangulate the beacon, you plot the direction of the beacon at your current location on a map. You repeat the process at two other places sufficiently far apart so that the three lines plotted on the map form a triangle. That area within the triangle is the predicted location of the beacon.

So far we have described a fox hunt with only one hidden transmitter, or "fox." World championships and international competitions have five low-power transmitters of 0.25 to 1 watt for 2m and 1 to 5 watts for 80m. Each transmits automatically and sequentially on the same frequency for one minute. Participants try to locate as many of them as possible and finish within the specified time. These rules are set by the International Amateur Radio Union (IARU).

The number of transmitters found and time taken to find them are considered in deciding the winner, though the priority is the number of transmitters found. Detailed orienteering maps are provided for plotting the location of the participant and the bearings of the foxes. Different competitions are held for 2m and 80m on different days. These bands are chosen because they have amateur allocations in almost all countries.

Direction finding isn't just for competitions, though. There are many other ways to give this niche activity a try:

- Stuck transmitters
- Lost hikers
- Malicious radio operators
- Animal tracking
- RFI
- Just for fun!

Questions? Email KE8FMJ@gmail.com.

Almost Everything You Wanted to Know About Zulu Time

By Mark Haverstock, K8MSH

So what's this Zulu Time and how does it relate to ham radio? Zulu Time is the military name for Universal Coordinated Time (UTC). Its time is fixed at Prime Meridian: 0° (zero degrees) longitude. This is the reason for its other names, Z-Time and Zero Time. Before Zulu, it was known as Greenwich Mean Time (GMT).

Greenwich Mean Time, Zulu, UTC, Military, 24-hour, whatever you call it, it is the world's time. No time zones, no seasonal time changes, just time. For ham radio, it provides the common time base needed for accurate QSO log keeping. In a manner of speaking, all amateur radio operators, regardless of their location, are using the same clock.

Why is It Called Zulu Time?

Since Great Britain was the world's greatest maritime power when the concept of latitude and longitude was developed, the starting point for designating longitude became the Prime Meridian (zero degrees). It intersects with the Royal Greenwich Observatory in Greenwich, England (hence the Greenwich in GMT). Built by King Charles II in 1675, it was the major center dedicated to navigation, astronomy, and timekeeping.

Royal Greenwich Observatory, walking on the prime meridian

Zulu Time is most often used today by the military, pilots, mariners, and hams. The purpose is standardization. How many military/action movies have you seen where they synchronize watches? As ships and airplanes crossed multiple time zones in one journey, it became more and more important to standardize time.

The term Zulu comes from the shortening of Zero Meridian Time to Z-Time. For a while, it was called Zebra (Zebra Time). The term Zulu Time was first used by the Royal Navy in the 19th century, conforming with the military phonetic alphabet.

How to Calculate Zulu Time

The main thing to know about Zulu Time is that it is always the same, no matter where you are in the world. Here's how to figure out your own personal version of Z-Time based on your location:

Convert your time to the 24-hour format, like the military uses. For example, if it's 2 p.m. where you are, add 12 hours to the time to get a military time of 1400. You don't need to add anything for a.m. hours. For example, 9 a.m. is 0900.

Adjust for the time difference (offset) where you are versus Z-Time. Pacific time is UTC – 8 hours, Pacific Daylight time is UTC-7 hours.

The beauty of Zulu Time is that you don't have to wonder which time zone is being referred to when you see the time. There is no a.m., p.m., or o'clock to worry about, either. Pronunciation just involves the numbers—0945Z is zero nine forty-five hours or oh nine forty-five hours. The Z indicates that the time is in Zulu (UTC) format, not local time.

Figuring out what the time is versus your local time does take some getting used to, but there are lots of apps and calculators on the web to help you figure things out, not to mention ham logging software.

On HF you can receive UTC time from WWV at 2.5, 5,10,15, 20 and 25 MHz.

Logging in Zulu

Logging in Zulu or UTC is highly recommended. Using UTC eliminates confusion over time zones or daylight savings time. Sure, you can calculate UTC on your own, but why not let your computer and logging program handle that chore? They keep the UTC date and time straight automatically. Of course, you are free to use local time as long as you indicate this clearly in the log. Avoid mixing UTC and local times and dates together in the log—use one or the other.

For example, N3FJP logging software reads the UTC time directly from your Windows operating system. As long as you have your time, time zone, and daylight savings time adjustment properly set in your Windows OS, the UTC will be logged correctly.

Here are some fast facts about Zulu/UTC time:

Zulu time does not change with the seasons, but local time may change with daylight savings time. For example, local time on the east coast of the United States is five hours behind Zulu time during winter, but four hours behind during daylight savings time.

NOAA satellites use Zulu Time or UTC as their time reference. The satellite images that appear on NOAA's websites are stamped in Zulu Time.

The Department of the Navy serves as the United States' official timekeeper. The Master Clock facility is at the U.S. Naval Observatory in Washington, D.C.

UTC is not a typo. When spoken, it is Universal Coordinated Time, but when written, it's UTC. The International Telecommunication Union (ITU) felt it was best to designate a single abbreviation for use in all languages in order to minimize confusion.

Is it 2400 or 0000? Military time uses both 2400 and 0000 to designate midnight. This may seem confusing at first, but it makes more sense if you think of 0000 as a start time and 2400 as an end time. You'd use 0000 in reference to the beginning of an activity but 2400 to indicate when an activity will end.

Imagine not receiving a QSL card from that very rare DX entity because you used the wrong conversion when going from your local time to UTC. Get a UTC clock. They're worth the investment.

People usually think that time zones are determined by whole numbers. Some countries use half-hour and quarter-hour offsets. India lies in the time zone UTC+5:30, South Australia and Northern Territory use UTC+9:30. Nepal lies in an even weirder time zone: UTC+5:45.

A leap second is a one-second adjustment that is occasionally applied to Zulu Time to reconcile the difference between precise time and imprecise observed solar time due to variations in the earth's rotation.

THE FIRST HAM SWAP OF THE YEAR IS COMING!

8TH ANNUAL
LOOMIS HAMFEST

Join the Sierra Foothills Amateur Radio Club for HAMFEST 2024!

Get your gear, grab your wallet, and get ready for a super swap.
We'll have coffee and donuts, awesome prizes,
Elmer tours, a test table, presentations, and so much more.

SAVE THE DATE: March 16th, 2024
More information can be found @ hamfest.w6ek.org

Sellers need to bring their own tables, chairs, pop-ups, generators (no shore power available)
No equipment will be provided.

SELLERS $10
Setup at 0600

FREE ADMISSION AND PARKING

TALK IN FREQUENCY
146.535

When
Saturday, March 16, 2024
0700 to 1100 Hours

Where
Historic Loomis Train Depot
5775 Horseshoe Bar Rd, Loomis

GEARS Officers:

President..........................Jamie Johnson KN6PWW
Vice-President..................Larry Mitchell KF6NCX
Treasurer..........................Jim Matthews K6EST
Secretary.........................Vacant
Director.............................Bennett Laskey K6CEL
Director.............................Darrell Chestanult KN6QXL
Director.............................Kevin Sterling K7KFS
Past President..................Paul Stewart N6PAS
VEC Chairman..................Tom Rider W6JS

GEARS Newsletter archive is here:
https://drive.google.com/GEARS
Follow GEARS on Facebook.com

GEARS Newsletter edited by Jim Matthews K6EST

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Your dues and contributions support our local repeaters, ARES, Field Day and outreach events to keep amateur radio alive in our area. GEARS also makes donations to support other local repeaters and clubs.

GEARS Dues and Donations can be made online at
paypal.me/w6rhc
Or by mail to:
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